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| 10/582,615 | 06/12/2006 | Taichi Majima | 0670-7078 | 2046 |
| 31780 | 7590 | 03/18/2009 | EXAMINER | |
| ERIC ROBINSON | | | KASSA, ZEWDU A | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/582,615

Applicant(s)

MAJIMA, TAICHI

Examiner

ZEWDU KASSA

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/88)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 06/12/2006,09/21/2006,02/21/2008,06/25/2008

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 7 and 12 are provisionally rejected on the ground of nonstatutory double patenting over claim 6 of copending Application No. 10/581667. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

| Claim # | App # 10582615 | Claim # | App # 10/581667 |
|---------|--|---------|---|
| 7 | <p>A receiving apparatus that receives a signal produced on the basis of hybrid bit data obtained by adding predetermined bits to respective bits of main data, the apparatus comprising:</p> <p>a demodulating part that demodulates the signal received;</p> <p>a symbol deciding part that applies, at every Nyquist interval, symbol decision to the signal demodulated by the demodulating part to produce a symbol value;</p> <p>a bit converting part that converts the symbol value produced by the symbol deciding part into a bit value; and a data recovering part that combines respective bits of the main data to recovery original main data from the bit value converted by the bit converting part, combines bit data added to the respective bits of the main data to form combined data, decides validity of the combined data formed, recovers data decided as valid as additional data, deletes the added bits when it is decided that the combined data is invalid, and combines the bit data from which the added bits are deleted to recovery original data.</p> | 6 | <p>A reception device for receiving an encoded data signal which is obtained by adding redundant bits to a set of specific bits within a plurality of bits composing data for transmission, said specific bits having high importance, said reception device comprising:</p> <p>a demodulation unit for demodulating said received encoded data signal;</p> <p>a symbol decision unit for performing a symbol decision at each Nyquist interval for the signal which has been demodulated by said demodulation unit;</p> <p>a bit conversion unit for converting a symbol value, which has been provided by performing the symbol decision by said symbol decision unit, into a bit value; and a data recovery unit for composing a data string by deleting the added redundant bit from the data of the bit value, which has been converted by said bit conversion unit, to restore original data.</p> |

| | | | |
|----|---|--|--|
| 12 | ===== Similarly analyzed as claim 7. | | |
|----|---|--|--|

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1- 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kushita (US 5835508) in view of Todoroki (US 5457705).

4. As per claim 1, Kushita teaches a transmitting apparatus comprising: a bit adding part that adds predetermined bits to bits of main data according to quality of an environment of a communication path to produce hybrid bit data; and (Kushita, Col 2 L24-35, Col 1 L45-50) a modulating part that performs modulation on the basis of the hybrid bit data produced to produce a modulated wave signal and transmits the modulated wave signal (Kushita, Col 4 L39-40), wherein the bit adding part operates to decide quality of an environment of a communication path, add, when it is decided that the environment of the communication path is defective, redundant bits to respective bits of main data to produce the hybrid bit data, and (Kushita, Col 2 L24-35).

5. Todoroki does not explicitly teach add, when it is decided that the environment of the communication path is non-defective, respective bits of associated data associated with the main data to the respective bits of the

main data instead of the redundant bits to produce the hybrid bit data. Todoroki teaches add, when it is decided that the environment of the communication path is non-defective, respective bits of associated data associated with the main data to the respective bits of the main data instead of the redundant bits to produce the hybrid bit data (Todoroki, Abstract "... having an information bit instead of a redundant bit"). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made, to implement the instant limitation, as taught by Todoroki, in the apparatus of Kushita because transmitting information data instead of a redundant bit as taught by Todoroki, when the channel quality is good, will provide a more data rate since kushita transmit a redundant bits only when the channel quality is defective and data transmission rate is controlled dynamically (Kushita, Col 2 L24-35, Col 1 L45-50, Col 9 L13-14).

6. As per claim 2, Kushita in view of Todoroki teaches the transmitting apparatus according to claim 1, wherein the bit adding part operates to arrange symbols of the hybrid bit data such that a Euclidian distance of the hybrid bit data added with the redundant bits is extended (Todoroki, Col 1 L23-33 "Euclidian").

7. The transmitting apparatus according to claim 1, wherein the bit adding part operates to add the redundant bits to the respective bits of the main data such that a gray code is produced (It is well known to use a gray code, where two successive values differ in only one bit, in error correction because it prevents ambiguity during detecting – see US 4901072 Col 1 L38-43).

8. As per claim 4, Kushita in view of Todoroki teaches the transmitting apparatus according to any one of claims 1 to 3, further comprising a received signal strength indicator measuring part that measures a received signal strength indicator of a data transmission destination, wherein the bit adding part operates to acquire the received signal strength indicator from the received signal strength indicator measuring part and decide quality of an environment of the communication path on the basis of a level of the received signal strength indicator acquired (Kushita, Col 3 L55-59 “channel quality signal indicative”).

9. As per claim 5, Kushita in view of Todoroki teaches the transmitting apparatus according to any one of claims 1 to 3, wherein the bit adding part operates to acquire at least one piece of information among the received signal strength indicator measured by a data transmission destination, a

vector error of a demodulated wave, and a bit error and decide quality of an environment of the communication path on the basis of the information acquired (Kushita, Col 4 L39-49 "... the destination decoder ... detects errors ...destination transmitting unit ... transmits the ... channel quality signal back to the source station ...").

10. As per claim 6, Kushita in view of Todoroki teaches the transmitting apparatus according to any one of claims 1 to 3, wherein the modulating part performs modulation in accordance with a multi-value FSK system (Kushita, Col 5 L54-55 "modulation" –it is well known in the art to perform "multi-value FSK system" –see US 5818875 Section "DESCRIPTION OF THE RELATED ART").

11. As per claim 7, Kushita teaches a receiving apparatus that receives a signal produced on the basis of hybrid bit data obtained by adding predetermined bits to respective bits of main data, the apparatus comprising: a demodulating part that demodulates the signal received (Kushita, Col 3 L42 "demodulating"); a symbol deciding part that applies, at every Nyquist interval, symbol decision to the signal demodulated by the demodulating part to produce a symbol value (Kushita, Col 3 L44-44, Col 8 L5-10); a bit converting part that converts the symbol value produced by

the symbol deciding part into a bit value (Kushita, Col 3 L44-44, Col 8 L5-10); and a data recovering part that combines respective bits of the main data to recovery original main data from the bit value converted by the bit converting part, combines bit data added to the respective bits of the main data to form combined data, decides validity of the combined data formed (Kushita, Col 1 L37-40), recoverys data decided as valid as additional data, deletes the added bits when it is decided that the combined data is invalid, and combines the bit data from which the added bits are deleted to recovery original data.

12. Kushita does not explicitly teach recoverys data decided as valid as additional data, deletes the added bits when it is decided that the combined data is invalid, and combines the bit data from which the added bits are deleted to recovery original data. Todoroki teaches recoverys data decided as valid as additional data, deletes the added bits when it is decided that the combined data is invalid, and combines the bit data from which the added bits are deleted to recovery original data (Todoroki, Col 7 L10-14). Thus, it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to implement the instant limitation as taught by Todoroki, in the apparatus of Kushita, because Kushita teaches how to recover a combined data of a redundant bits and main data in

general and Todoroki teaches the benefit of adding additional information bit on main data instead of redundant data and on receiving side a method of determining a valid additional data or redundant data, that provide an improved communication system with information rate increased (Todoroki, Col 1 L15, Col 7 L10-14).

13. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kushita (US 5835508) in view of Todoroki (US 5457705), as applied above in claim 7, and further in view of Bader (US 2003/0167425).

14. As per claim 8, Kushita in view of Todoroki teaches the receiving apparatus according to claim 7 (see claim 7).

15. Kushita in view of Todoroki does not explicitly teach wherein the data recovering part operates to decide validity of the combined data formed by combining the added bit data in accordance with a cyclic redundancy check. Bader teaches wherein the data recovering part operates to decide validity of the combined data formed by combining the added bit data in accordance with a cyclic redundancy check (Bader, Para [0075]). Thus, it would have been obvious to one having ordinary skill in the art, at the time the

invention was made, to implement the instant limitation as taught by Bader, to implement in the system of Kushita in view of Todoroki because it is a well known standard or practice to use CRC for the validity of a received data.

16. “In re claim 9, Kushita in view of Todoroki discloses a data transmitting method because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”

17. “In re claim 10, Kushita in view of Todoroki and Bader discloses a data receiving method because under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claims, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324,231 MPEP 2112.02”

18. As per claim 11, similarly analyzed as claim 1.
19. As per claim 12, similarly analyzed as claim 7.

Conclusion

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZEWDU KASSA whose telephone number is (571)270-5253. The examiner can normally be reached on Monday - Friday (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571 272 3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

zk

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611